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A systematic review of end of life care communication skills training for generalist palliative care providers: research quality and reporting guidance

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Abstract

Context: End of life care (EoLC) communication skills training for generalist palliative care providers is recommended in policy guidance globally. Whilst many training programmes now exist, there has been no comprehensive evidence synthesis to inform future training delivery and evaluation.

Objectives: To identify and appraise how EoLC communication skills training interventions for generalist palliative care providers are developed, delivered, evaluated, and reported.

Methods: Systematic review. Ten electronic databases (inception to December 2015) and five relevant journals (January 2004 to December 2015) were searched. Studies testing the effectiveness of EoLC communication skills training for generalists were included. Two independent authors assessed study quality. Descriptive statistics and narrative synthesis are used to summarise the findings.

Results: From 11,441 unique records, 170 reports were identified (157 published, 13 unpublished), representing 160 evaluation studies of 153 training interventions. Of published papers, eight were low quality, 108 medium, and 41 high. Few interventions were developed with service user involvement (n=7), and most were taught using a mixture of didactics (n=123), reflection and discussion (n=105), and roleplay (n=86). Evaluation designs were weak: <30% were controlled, <15% randomised participants. Over half (n=85) relied on staff self-reported outcomes to assess effectiveness, and 49% did not cite psychometrically validated measures. Key information (e.g. training duration, participant flow) was poorly reported.

Conclusions: Despite a proliferation of EoLC communication skills training interventions in the literature, evidence is limited by poor reporting and weak methodology. Based on our findings we present a CONSORT statement supplement to improve future reporting and encourage more rigorous testing.

Registration number: CRD42014014777

Key Words: Education, Communication, Review, Terminal Care, Palliative Care

Running title: Review of EoLC communication skills training

Introduction

Global demographic ageing means providing end of life care (EoLC) is now increasingly the responsibility of generalist as well as specialist palliative care providers (1-3). This includes communication with patients facing the end of life, which many healthcare providers find challenging (4-9). Absent or poor quality communication results in confusion, reduced satisfaction, poor quality of life, and inadequate symptom relief for service users (10). Furthermore, health and social care professionals who feel insufficiently trained in communication skills are more likely to report depersonalised care and burnout (11, 12). Consequently, training in communication is advocated internationally as essential for all those working in EoLC (13-18).

Following Maguire's work in the field of communication skills training (19-21), and Fallowfield et al.'s (22-26) pioneering workshops teaching communication skills to oncologists, research in this field has been increasing. This includes teaching and evaluating communication skills specific to EoLC (27-29). Reasons for this include recognition of the specific difficulties faced in EoLC communication, including discussing imminent mortality, limited treatment options, and EoLC preferences (8). However, there remains little consensus regarding optimal training strategies, the most effective teaching methods, and what constitutes an adequate 'dose' of training. Although there has been some evidence synthesis in relation to EoLC communication training interventions for specific staff groups (e.g. oncology (30-33), non-cancer care in acute settings (27)), there has been no comprehensive consideration of the evidence regarding training interventions for all those involved in the delivery of generalist palliative care. This is required not just as a resource for clinical educators and researchers, but also to enable research in this field to progress.

The aim of this systematic review was therefore to identify and appraise the development, delivery, evaluation, and reporting of EoLC communication skills training interventions for generalist palliative care providers. Specifically, our objectives were to: (1) identify and describe existing training interventions in relation to their development, content, duration, and teaching methods, (2) appraise

how these interventions have been evaluated for effectiveness, and (3) assess the quality of reporting of interventions and their evaluation.

Methods

The protocol for this systematic review was prospectively registered with PROSPERO (CRD42014014777)(34). The methods are summarised below, and reported in full in a partner paper in which we synthesise data from randomised controlled trials (RCTs) assessing the effect of communication skills training for generalists on patient outcomes and staff behaviour (35).

Search Strategy

The following 10 databases were searched from inception until December 2015: MEDLINE, EMBASE, and PsycINFO (via Ovid), CENTRAL (via Wiley), Web of Science (Science Citation Index Expanded, Social Sciences Citation Index, Arts & Humanities Citation Index, Conference Proceedings Citation Index: Science, Social Science & Humanities), ERIC and CINAHL (via Ebscohost), WHO International Clinical Trials registry, CORDIS, and Open Grey. Free text terms for searching titles, abstracts, and key words were combined with database-specific subject heading terms, following the structure of [end of life care] AND [communication skills] AND [training](see online supplementary material Box S1 for the full search strategy). Reference lists of six relevant published reviews (28, 32, 33, 36-38), and five relevant journals (*Journal of Palliative Medicine, American Journal of Hospice and Palliative Medicine, Palliative Medicine, Journal of Cancer Education,* and *Palliative and Supportive Care*) were hand searched from January 2004 to December 2015. Where only conference abstracts were available, emails were sent to at least two authors requesting recently published or unpublished reports of the research.

Study Selection

Titles and abstracts were screened for inclusion by one author [LB/AH]. To be included, reports had to test the effectiveness of a training intervention designed to improve EoLC communications skills. Training was defined as any planned, systematic effort to develop knowledge, skills or attitudes through a learning experience (39). Interventions included EoLC training with communication skills training components, and communication skills training with EoLC components. EoLC communication was defined broadly to include the range of issues related to progressive, incurable illness and end of life care, for example: advance care planning, discussing transition to palliative care, and/or talking about dying. Training participants could not have (or be in the process of obtaining) specialist palliative care qualifications, but must work or expect to work with patients with advanced, progressive, incurable illness. Generalist providers of palliative care include, for example: general practitioners, oncologists, social workers, and hospital volunteers.

Studies were not excluded by language, year, publication status, design, or outcomes measured. Studies were excluded if the training intervention:

- was not assessed for effectiveness
- did not include EoLC communication skills
- had >20% participants with (or undertaking) specialist palliative care qualifications AND generalist course participant results could not be separated
- was aimed at paediatrics
- focused on communication with individuals other than the patient
- was for patients or family members themselves
- was a ‘train the trainer’ intervention
- occurred alongside extensive system intervention (e.g. change in clinic structure and patient records), meaning the effect of training alone was unclear.

Full papers were obtained for studies that could not be excluded based on the information in the title and abstract. Each paper was then assessed for eligibility by two authors [LB, AH, CM, SO], with disagreements resolved through discussion with a third author [LS/JK].

Data Extraction and Analysis

Data were extracted to a digital form and double-checked by a second author [LB, AH, CM, SO]. A full list of extracted information can be found in the review protocol (34). Quality was assessed independently by two authors [LB, AH, CM, SO] using the 'Checklist for both Randomised and Non-Randomised Studies' (40). Statistical power was scored 0 or 1 (rather than 0-5), where 1 point is awarded for presence of power calculation and 0 for no evidence of power calculations (41, 42). This gives a total possible score of 28, grouped into low (<33.3%), medium (33.4-66.6%), and high (>66.7%)(42). Total scores were not calculated for unpublished work due to the substantial reporting component in the criteria (11/28 points). Descriptive statistics and narrative synthesis were used to summarise training development, delivery, evaluation, and reporting quality.

Results

Study selection: 11,441 unique records were identified. Of these, 845 full texts were screened and 170 judged eligible for inclusion (Figure 1). The majority (n=89, 52%) reported studies in the USA, followed by the UK (n=28, 17%), Germany (n=8, 5%) and Japan (n=8, 5%). There were 166 papers available in English, three in German and one in Spanish. Out of the 170 papers, 157 were published and 13 were unpublished, submitted or in-press. A summary of all training and study details can be found in the online supplementary material, Table S1.

[INSERT 1: PRISMA flow chart (43)]

Risk of bias: The mean total quality score for the 157 published papers was 16.88 (SD 3.88). There were eight low quality, 108 medium quality, and 41 high quality papers.

Developing and Delivering Training

***Training development*:** Of the 153 unique training interventions 110 (72%) indicated how the course was developed. This most commonly included reference to existing literature (n=87), particularly training interventions reported by others (n=29) or specific theories (n=27). Integration of staff or 'expert' views was also common (n=54), including local needs assessments (n=11). Other authors referred to their own previous work or pilot projects (n=19). Few (n=7) reported including patient or family views in their development. The reporting of development strategies varied widely, from single sentences to entire papers describing training development. For 43 (28%) training interventions, no information egarding training development was reported.

***Training content*:** Most (n=63) training interventions were palliative/EoLC courses with a communication skills component, followed by courses focused on palliative/EoLC communication skills (n=33), cancer-specific courses with a palliative/EoLC communication skills component (n=28), and communication skills courses with a palliative/EoLC component (n=10). The remaining courses were specialism- or condition-focused courses (see Table S1, Supplementary Material).

Teaching methods: Information on the teaching methods used were available for 148 (97%) of the training interventions, with the number of methods reported ranging from one to 10 (median 4; n=112 (73%) reported 3-5). The most common teaching methods reported were didactics (i.e. lectures, presentations; n=123), reflection and discussion (n=105), roleplay (n=86), and group work (n=66). Many also used case studies (n=52), self-study (n=44), clinical experiences or visits (n=31; e.g. to hospices), e-learning (n=22), and personalised audio and/or video feedback (n=12). A minority reported using a communication model (e.g. SPIKES (44), PREPARED (45); n=27). No clear information on teaching methods was available for five interventions (3%).

Duration and training hours: Course duration ranged from 40 minutes (46) to 16 months (47). This included seven interventions with a total training time of an hour or less, 51 lasting 2-10 hours, 27 lasting 11-20 hours, 16 lasting 21-30 hours, and 11 lasting 31 hours or more. Information on duration and/or total training hours was missing or unclear for 57 (37%) training interventions.

Staff group: Seventy-five percent of interventions focused on teaching one staff group (n=115): most often junior doctors (i.e. interns, residents, registrars, fellows, n=32), medical students (n=32), nurses (n=22) and doctors (n=16). Multidisciplinary groups were taught in 33 courses, and members of the same discipline but with different levels of training were taught in five courses.

***Cost*:** For almost all interventions, there was no clear information on the costs associated with running the training (97%, n=148). Those that did specify cost generally provided costs in terms of hours and resources needed to run the course. One study specified a monetary cost (48).

Evaluating Training Effectiveness

Design: The included reports represented 160 unique studies. The majority relied on weak study designs subject to bias: the most common were quasi-experimental pre-post studies, without (n=96) and with (n=16) control groups, followed by cross-sectional post-only studies (without control, n=13; with control, n=6). A minority were randomised controlled trials (RCTs; n=21). Three studies used post-course and retrospective pre-course measurements (no control group), and five studies used a combination of designs (e.g. pre-post, use of a control group for selected outcomes only). Some papers (n=2) reporting a previously published study did not present results in line with the original study design (e.g. reporting pre-post data for the intervention group, although the original study was an RCT).

***Outcomes*:** Subjective staff self-reported outcomes (e.g. confidence, attitudes, burnout) were the most frequently measured across studies (n=150, 94%), and in most studies (n=85, 53%) were the only type of outcome measured. Objective knowledge (n=42, 26%), observed behaviours (including researcher- and colleague- rated behaviours; n=32, 20%) and process outcomes (n=6, 4%) were assessed less frequently. Few studies assessed the impact of staff training on patient or family outcomes (n=10, 6%). Seventy-nine studies (49%) did not appear to use any measures that had been psychometrically tested (or this information was missing/unclear). Most studies (n=96, 60%) measured outcomes within one month post-intervention.

Study participants: Staff sample sizes (based on number of trainees and controls reflected in the primary analyses) ranged from six to 487. Some studies with fewer trainees/controls had a greater number of patient participants (e.g. Fukui et al., 2008 (49): eight staff, represented by 89 patients). Papers differed greatly in which Ns were reported (e.g. started the course, completed the course, completed the outcome measures), and often failed to distinguish between attrition due to missing data or participants having not completing the training. For the majority of studies (61%, n=97) the flow of study participants was unclear, due to unexplained attrition, or inability to determine the number of dropouts.

Reporting quality

Reporting quality across the 157 published papers as rated using the Downs and Black Checklist ranged from one to 11, with a median of eight. In 52 papers (31%) the characteristics of study participants were inadequately described, and in 53 papers no estimates of random variability were provided for their main outcomes (31%). Nearly all (n=154, 91%) papers failed to report monitoring for adverse events in relation to training (e.g. dropouts due to emotional content of the courses). The data extraction process also highlighted the variability in reporting a number of variables that are critical when interpreting results; for example, training duration and participant flow (see Table 1).

[INSERT TABLE 1: Reporting quality from data extraction across training and study variables]

Discussion

This is the first comprehensive systematic review of EoLC communication skills training for generalist palliative care providers. We identified a wide range of training interventions for this population. Most were based on existing literature, ranging from published evidence and guidance to broader theoretical approaches. However, patient and family involvement in training development was rare. EoLC communication was most commonly taught in the context of broader palliative or EoLC training courses, using a mixture of didactics, reflection and discussion, and roleplay. Three-quarters of the training courses were focused on teaching a single staff group, particularly medics at various stages in their careers. In testing the effectiveness of training interventions, methodologically weaker designs (e.g. lacking control groups) were common. Outcome assessment was usually subjective and self-reported by staff, and used unvalidated measures and short-term follow-up. Few studies assessed how training impacted patients and/or families. Poor reporting hindered data extraction in relation to the specifics of both interventions and study design; for example, training hours, training costs, and study participant recruitment and attrition.

Our findings build on those of previous reviews. Pulsford et al.'s (37) review of EoLC training for health and social care staff noted the lack of patient and family input in training development and few multidisciplinary learning groups. More recently, Walczak et al.'s (28) review of EoLC communication interventions, Lord et al.'s (27) review of EoLC communication training in non-cancer acute settings, and Chung et al.'s (29) review of EoLC communication skills training specific to decision making commented on the methodological weakness of studies evaluating training interventions. This weakness related to the use of uncontrolled, non-randomised study designs and a wide range of self-reported outcome measures, many of which were unvalidated. It is noteworthy that Fallowfield et al.'s (22-26) workshop for oncologists still remains one of a small number of training interventions evaluated using a randomised controlled design and both staff- and patient-reported outcomes. Developing and evaluating training is challenging, but recommendations for developing

and evaluating complex interventions (50), including those with an EoLC focus (51), should inform research in this field. These recommendations include guidance for involving service users. Considering the patient-focused drivers of these initiatives, patients and family members are still infrequently involved from training development through to evaluation. International expert consultation may also be useful to develop more specific guidance on consistent outcome measurement using validated tools. However, investment of funders in more rigorous (and often more lengthy and therefore costly) research studies will also be essential to improve the state of the science.

While poor reporting of outcome measurement (27) and study results (32) have previously been identified in this field, our comprehensive data-extraction process across 170 unique records identified inadequate reporting of interventions and their evaluations (Table 1). Lack of transparency in reporting is problematic, hindering progression in the field in two ways. First, poor reporting of evaluation studies prevents critical appraisal of training effectiveness. For example, claims to effectiveness evidenced by increased staff confidence and improved staff behaviours are misleading when measured by outcome tools lacking adequate psychometric properties, or when only 50% of trainees completed the full course. Second, poor reporting hinders identification of the 'active ingredients' of complex interventions that contribute to their effectiveness (50); for example, the number of contact hours, whether the course is taught by palliative care specialists, or whether the intervention is delivered off-site on a retreat. If clinical educators and researchers are to provide evidence-based, effective training in EoLC communication skills, the quality of reporting must be improved. In response to this crucial issue and on the basis of our findings, we recommend a supplement to the CONSORT reporting guidance (52), specifically for training interventions (Box 1). We suggest further face-to-face expert consultation on this supplement (as recommended by members of the EQUATOR network and CONSORT executive when developing reporting guidelines (53)), and that authors of all studies evaluating training interventions, regardless of design, complete this checklist to ensure comprehensive reporting.

[INSERT BOX 1: Reporting checklist for training interventions]

Internationally, government initiatives and national reports continue to promote the importance of communication skills training interventions when providing palliative and EoLC (13-18). The large numbers of training interventions across the globe demonstrate a commitment to this goal. However, without rigorous and comparable evaluations it will be impossible to identify the optimal 'dose', structure, and methods for delivering teaching in these skills. This review, including our partner paper synthesising data on effectiveness (35), provides a consolidated resource for clinician educators and researchers who are seeking to source evidence-based training, or examine the current levels of evidence for different types of EoLC communication skills training interventions. Going forward, however, it is clear that development of additional training interventions with weak levels of evidence will not help advance this field. While an RCT might not always be feasible, employing a non-randomised controlled design would have improved many of the studies we identified. Although not without its challenges (54), more rigorous testing of training effectiveness using patient- and family-reported outcome measures must also become the priority for clinical educators, researchers, and funders. Whilst doubts have been cast over the ability to measure the impact of training using untrained patients and families(55), there are examples that show this is possible (e.g. Fukui et al. and Tulsky et al. (56, 57)). Crucial here is the selection of measureable outcomes relevant to the aims and content of the intervention. Such evidence is essential to provide consensus on what works best not only for trainees, but also for recipients of their care. Researchers also have a responsibility to ensure such training and study findings are reported with detail, clarity, and transparency.

This systematic review has both strengths and limitations. The review was inclusive in terms of study design, outcomes, language and publication status. Although the unpublished studies included may not have been subjected to peer review, we considered it important to capture relevant grey literature. Firstly, not all educational initiatives seek academic publication, and secondly, this allowed inclusion of recent projects that had not yet reached publication stage. However, as our search strategy focused on academic resources, we may have missed grey literature outside of these areas (e.g. reports on medical education websites). Initial screening was carried out by one author in the first instance due to

the large number of studies identified; however, the inclusion criteria were applied broadly at this stage, and two authors assessed the eligibility and quality of full papers. Our description of the training interventions was limited by unclear and missing information in the study reports. For example, as data on development were missing for 46 of the training interventions and reported to a highly variable extent for the remainder, our results might underestimate use of patient and family input in course development. This paper does not provide evidence on the effectiveness of each of the training interventions identified; this is explored with a subset of studies (RCTs) in a partner publication (35). Finally, we included studies of interventions focused on communication with patients, which will have excluded critical care EoLC communication skills training interventions targeted at communication with relatives.

Conclusion:

Based on our findings it is clear that testing of communication skills training effectiveness using stronger research designs and validated outcome measures must be the priority for clinical educators, researchers, and funders. Our review also highlights the need for improved clarity and consistency regarding the reporting of training interventions focussing on EoLC communication and their effectiveness. Our synthesis of the evidence and suggested guidelines for reporting are intended to contribute to future improvements in this field.

Disclosures:

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Figure 1: PRISMA flow chart

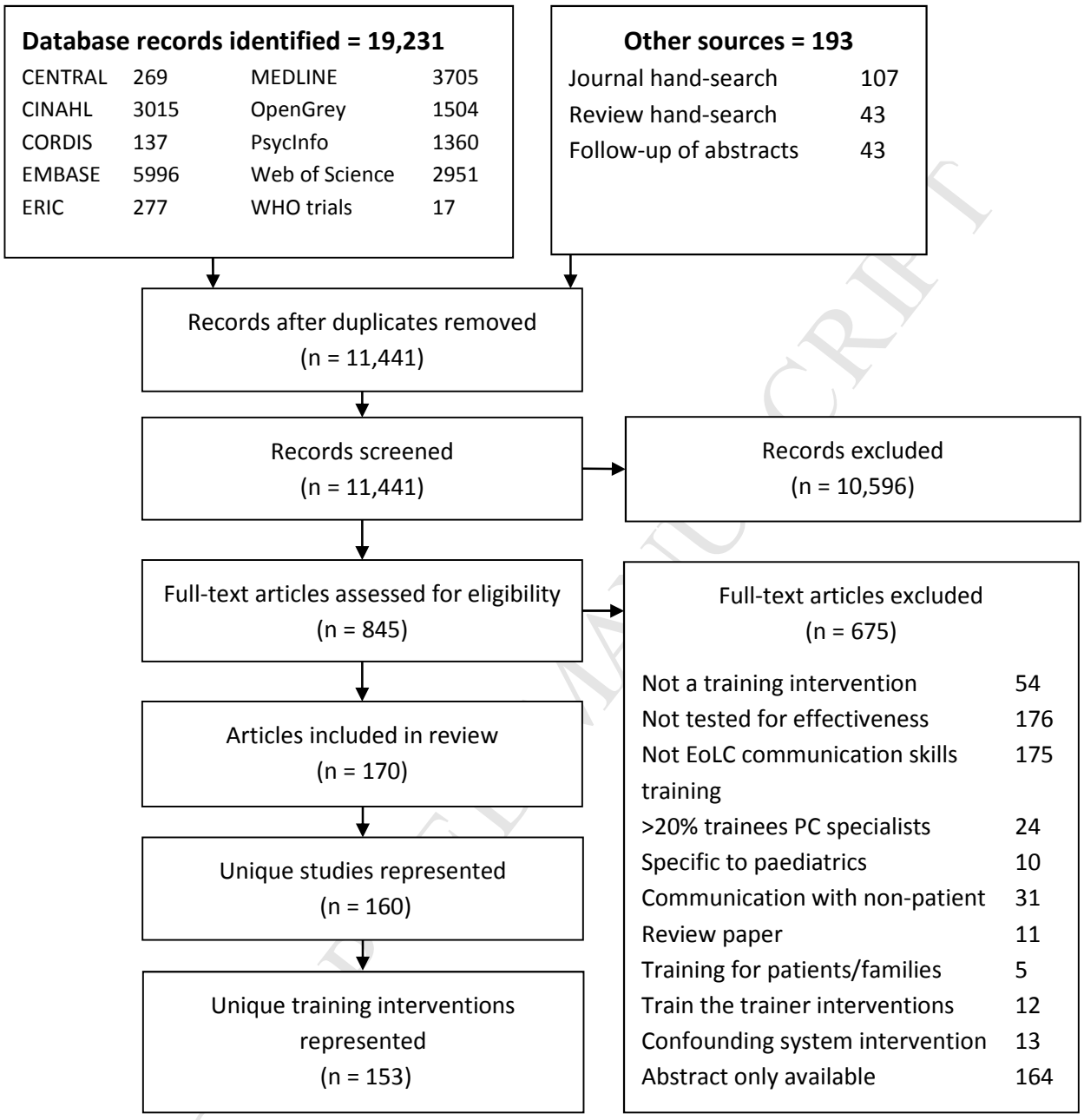

Table 1: Reporting quality from data extraction across training and study variables

Item	Studies for which item reporting is unclear/ missing n (%)
Training intervention details (n=153)	
Development strategies	43 (28%)
Duration of training (start to completion)	37 (24%)
Total training hours	41 (27%)
Teaching methods	5 (3%)
Training location	87 (57%)
Teacher qualifications	54 (35%)
Study details (n=160)	
Recruitment of trainees	35 (22%)
Number/nature of dropouts	97 (61%)
Costs	155 (97%)

Box 1: Reporting checklist for training interventions (Recommended as a supplement to CONSORT statement Item 5: Interventions)

5. Interventions

Describe or cite where the following can be found:

Item No	Checklist Item	
5.01	Development	*How was the training intervention developed? E.g. based on a literature review, focus groups with stakeholders, published guidelines.*
5.02	Intended trainees	*Who is the training intervention intended for? E.g. for student nurses in their final year.*
5.03	Recruitment	*How were trainees recruited? E.g. mandatory part of medical degree, advertised online to approx. 2,000 nursing staff.*
5.04	Content	*What topics are covered? E.g. theories, symptoms, communication, teamwork.*
5.05	Methods	*What teaching methods are used? E.g. presentations, roleplay, group work. Mention any specific equipment needed.*
5.06	Structure	*How long is the training? State total number hours of training, across how many sessions, and over what time period.*
5.07	Teachers	*Who taught the course? Specifically, what were their qualifications, and were they the same for each course?*
5.08	Location	*Where was the course run? E.g. university building, teaching room at the hospital, hotel retreat.*
5.09	Adverse events	*How were adverse events considered and monitored? E.g. dropouts due to sensitive topics.*
5.10	Cost	*How much did the course cost to run? This should consider materials and staffing.*

Box S1: Example Search Strategy (MEDLINE)

1	Palliative care/ or Hospice care/ or Hospices/ or Terminal care/ or Terminally ill/
2	(Pallia* or Hospice*).ab,ti,kw.
3	(Supportive and (care or caring or team or ill*)).ab,ti,kw.
4	(Terminal* and (care or caring or ill*)).ab,ti,kw.
5	"respite care".ab,ti,kw.
6	("Advanced disease*" or "Advanced illness*" or "Advanced cancer*").ab,ti,kw.
7	("critical illness" or "critical illnesses" or "critically ill" or "critical care").ab,ti,kw.
8	("Imminent death" or dying).ab,ti,kw.
9	("Limited life expectanc*" or "Limited life span*" or "Limited lifespan*").ab,ti,kw.
10	("End of Life" or "End-of-Life" or "Last year of life" or "End Stage" or "End-stage").ab,ti,kw.
11	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10
12	Communication/ or Clinical Competence/
13	(Communicat* or "Interpersonal skill*").ab,ti,kw.
14	"Bad news".ab,ti,kw.
15	("Advance Care Plan*" or "Advance clinical decision*").ab,ti,kw.
16	"psychosocial care".ab,ti,kw.
17	("living will" or "withholding treatment").ab,ti,kw.
18	12 or 13 or 14 or 15 or 16 or 17
19	Education/
20	(Train* or Educat* or Course* or Workshop*).ab,ti,kw.
21	19 or 20
22	11 and 18 and 21

Table S1. Descriptive Information on all studies

Training ID	**Development** Staff views	Patient/Family views	Previous literature	Own work/Piloting	**Staff Group**	**Training Hours**	**Teaching methods** Didactics	Reflection/Discussion	Group Work	Case Studies	Com. Model[a]	Role Play	Personal Vid/Aud[b]	Clinical Exp, or Visit[c]	E-learning	Self-Study	**Study ID, if multiple**	**Study Design**	**Study Quality***	**Paper ID, if multiple**	**N**	**Outcome Types** Patient/Family	Behaviours	Processes	Self Assessment	Objective Knowledge
PC/EOL communication skills																										
Betcher (2010)[1] *USA*	✓			✓	Nurses	M/U	✓	✓				✓	✓					Pre/post-test, no control	L		0-49				✓	
Bloomfield[2] (2014) *UK*	✓		✓		Nursing & Medical Students	≤1 hour		✓		✓		✓						Pre/post-test, no control	M		0-49				✓	
Carmargo (unpub)[3] *USA*	✓		✓		Junior doctors	11-20 hours	✓	✓	✓	✓	✓	✓						Pre/post-test, no control			0-49				✓	
Charlton (1993)[4] *New Zealand*				✓	Medical students & Junior Doctors	2-10 hours		✓	✓			✓				✓		Pre/post-test, no control	M		0-49				✓	
Clayton (2012)[5] *Australia*			✓		Junior doctors	2-10 hours	✓				✓	✓				✓		Pre/post-test, no control	H		0-49		✓		✓	
Coppeard (unpub)[6] *UK*			✓		Multidisciplinary group	2-10 hours	✓		✓			✓						Pre/post-test, no control			200+				✓	
Curtis et al (2013-14)[7-9] *USA*			✓		Nurses & Junior Doctors	21-30 hours	✓	✓	✓		✓	✓						Randomised, controlled	H	Curtis (2013)[7]	150-199	✓			✓	
																				Bays (2014)[8]	100-149		✓			
																				Brown, C. (unpub)[9]	200+				✓	

Training ID	Development: Staff views	Development: Patient/Family views	Development: Previous literature	Development: Own work/Piloting	Staff Group	Training Hours	Teaching methods: Didactics	Reflection/Discussion	Group Work	Case Studies	Com. Model[a]	Role Play	Personal Vid/Aud[b]	Clinical Exp, or Visit[c]	E-learning	Self-Study	Study ID, if multiple	Study Design	Study Quality*	Paper ID, if multiple	N	Outcome Types: Patient/Family	Behaviours	Processes	Self Assessment	Objective Knowledge
Denham (2006)[10] *USA*	✓		✓		Healthcare assistants	≤1 hour	✓								✓			Pre/post-test, no control	M		50-99				✓	✓
Detering (2014)[11] *Australia*	✓		✓	✓	Doctors & junior doctors	2-10 hours				✓						✓		Pre/post-test, no control	M		50-99		✓		✓	✓
Duke (unpub)[12] *UK*	✓				Multidisciplinary group (inc. non-reg)	≤1 hour												Pre/post-test, no control			50-99				✓	
Efstafthiou (2014)[13] *UK*	✓				Multidisciplinary Students	M/U		✓										Pre/post-test, no control	M		50-99				✓	
Fischer (2007)[14] *USA*					Junior doctors	2-10 hours		✓	✓	✓		✓						Pre/post-test, no control	M		0-49				✓	✓
Furman (2006)[15] *USA*					Junior doctors	M/U	✓	✓				✓						Pre/post-test, no control	M		0-49			✓		
Greenberg (1993)[16] *USA*					Medical students	M/U	✓	✓						✓				Randomised, controlled	M		100-149				✓	✓
Griffiths (2015)[17] *UK*					Nurses	2-10 hours	✓	✓		✓		✓						Pre/post-test, no control	M		0-49				✓	
Han (2005)[18] *USA*			✓		Junior doctors	≤1 hour		✓						✓				Pre/post-test, no control	M		0-49				✓	
Kahn (2001)[19] *USA*					Medical students	2-10 hours		✓				✓						Pre/post-test, no control	M		0-49				✓	
Kerai (2013)[20] *USA*			✓		Junior doctors	2-10 hours	✓	✓			✓	✓						Controlled, post-test only	L		0-49				✓	

Training ID	Development: Staff views	Development: Patient/Family views	Development: Previous literature	Development: Own work/Piloting	Staff Group	Training Hours	Teaching methods: Didactics	Reflection/Discussion	Group Work	Case Studies	Com. Model[a]	Role Play	Personal Vid/Aud[b]	Clinical Exp, or Visit[c]	E-learning	Self-Study	Study ID, if multiple	Study Design	Study Quality*	Paper ID, if multiple	N	Outcome Types: Patient/Family	Behaviours	Processes	Self Assessment	Objective Knowledge
Kiley (unpub)[21] *USA*	✓				Nurses	M/U	✓	✓		✓	✓				✓			Pre/post-test, no control			0-49			✓	✓	
Kopp (unpub)[22] *USA*			✓		Nursing students	2-10 hours	✓	✓				✓				✓		Controlled, post-test only			0-49		✓		✓	✓
McCallister (2015)[23] *USA*			✓		Junior doctors	M/U	✓	✓	✓			✓		✓				Controlled, pre- and post-test	H		0-49		✓		✓	
Morris (2011)[24] *UK*			✓		Healthcare assistants	11-20 hours	✓	✓				✓	✓					Pre/post-test, no control	M		50-99				✓	
Murray (2010)[25] *Canada*	✓		✓		Nurses	M/U	✓	✓	✓	✓	✓	✓			✓			Randomised, controlled	H		50-99		✓	✓	✓	✓
Pekmezaris (2011)[26] *USA*					Junior doctors	11-20 hours	✓	✓	✓			✓			✓			Controlled, pre- and post-test	M		150-199				✓	
Runkle (2008)[27] *USA*	✓		✓		Doctors	2-10 hours	✓		✓			✓				✓		Mixed designs	M		150-199				✓	✓
Schildmann (2011)[28] *Germany*					Doctors	2-10 hours	✓	✓	✓		✓	✓						Pre/post-test, no control	L		200+				✓	
Schmeling (1980)[29] *Germany*			✓		Multidisciplinary group (inc. non-reg)	11-20 hours	✓	✓	✓			✓						Mixed designs	L		100-149				✓	
Smith (2013)[30] *USA*			✓		Junior doctors	2-10 hours	✓	✓	✓	✓		✓						Pre/post-test, no control	H		0-49				✓	
Szmuilowicz (2010)[31] *USA*					Junior doctors	2-10 hours	✓	✓	✓	✓		✓						Randomised, controlled	H		0-49		✓		✓	

Training ID	Development		Teaching methods										Training Hours	Staff Group	Study Design	Study Quality*	Paper ID, if multiple	N	Outcome Types			
	Staff views	Patient/Family views	Previous literature	Own work/Piloting	Didactics	Reflection/Discussion	Group Work	Case Studies	Com. Model[a]	Role Play	Personal Vid/Aud[b]	Clinical Exp, or Visit[c]	E-learning	Self-Study	Study ID, if multiple									
Szmuilowicz et al (2012)[32, 33] *USA*					✓								✓	✓		M/U	Junior doctors	Randomised, controlled	H	Szmuilowicz (2012)[32]	0-49			✓	
																				Wayne (2012)[33]	0-49		✓		
Weber (2003)[34] *Germany*			✓		✓	✓	✓			✓						11-20 hours	Doctors	Pre/post-test, no control	L		0-49			✓	
Wittenberg (2012)[35] *USA*			✓	✓	✓	✓	✓	✓		✓						2-10 hours	Nursing students	Pre/post-test, no control	M		0-49			✓	
Wittenberg (2014)[36] *USA*			✓		✓	✓		✓					✓			≤1 hour	Nurses & doctors	Post-test only, no control	M		100-149			✓	✓
PC/EOL inc. communication skills																									
Adriaansen (2005)[37] *Netherlands*	✓		✓		✓	✓	✓							✓		21-30 hours	Nurses	Controlled, pre- and post-test	M		50-99			✓	✓
Alexander (2006) [38] *USA*					✓	✓				✓						11-20 hours	Junior doctors	Controlled, pre- and post-test	H		0-49		✓		
Byrne (unpub)[39] *Ireland*			✓		✓	✓	✓	✓		✓						2-10 hours	Nurses	Post-test only, no control			100-149			✓	
Claxton-Oldfield (2007) [40] *Canada*					✓									✓		21-30 hours	Volunteers	Pre/post-test, no control	M		0-49			✓	
Claxton (2011)[41] *USA*			✓										✓			M/U	Junior doctors	Randomised, controlled	M		50-99			✓	✓
Conner (2014)[42] *USA*						✓						✓	✓	✓		M/U	Nursing students	Controlled, pre- and post-test	M		100-149			✓	

Training ID	Development: Staff views	Development: Patient/Family views	Development: Previous literature	Development: Own work/Piloting	Staff Group	Training Hours	Teaching methods: Didactics	Reflection/Discussion	Group Work	Case Studies	Com. Model[a]	Role Play	Personal Vid/Aud[b]	Clinical Exp, or Visit[c]	E-learning	Self-Study	Study ID, if multiple	Study Design	Study Quality*	Paper ID, if multiple	N	Outcome Types: Patient/Family	Behaviours	Processes	Self Assessment	Objective Knowledge
Day (2015)[43] *USA*	✓			✓	Medical students	2-10 hours				✓					✓			Randomised, controlled	H		100-149				✓	✓
De La Cruz (2012)[44] *USA*			✓		Medical students	M/U	✓	✓	✓			✓		✓				Post-test only, no control	M		100-149		✓		✓	
De La Cruz (2014)[45] *USA*					Medical students	M/U												Randomised, controlled	H		100-149		✓		✓	
Delgado (2009)[46] *Colombia*	✓		✓		Medical students	M/U												Pre-(retrospective) and post-test, no control	M		50-99				✓	
DeVader (2012)[47] *USA*			✓		Junior doctors	2-10 hours	✓											Pre/post-test, no control	M		0-49			✓	✓	✓
Ellman (2009)[48] *USA*	✓		✓		Medical students	M/U	✓	✓						✓				Controlled, post-test only	M		200+				✓	
Ellman (unpub)[49] *USA*	✓	✓	✓	✓	Medical students	31+ hours	✓	✓				✓		✓	✓	✓		Controlled, post-test only			200+		✓		✓	
Ersek (2005)[50] *USA*	✓		✓	✓	Nurses & healthcare assistants	31+ hours	✓	✓	✓	✓		✓						Pre/post-test, no control	M		150-199		✓		✓	✓
Farrington (2014)[51] *UK*	✓		✓		Healthcare assistants	11-20 hours	✓	✓		✓					✓			Pre/post-test, no control	M		0-49			✓	✓	
Ferrell (1998)[52] *USA*	✓				Nurses & healthcare assistants	2-10 hours	✓			✓						✓		Pre/post-test, no control	M		50-99				✓	

Training ID	Development				Staff Group	Training Hours	Teaching methods										Study ID, if multiple	Study Design	Study Quality*	Paper ID, if multiple	N	Outcome Types					
	Staff views	Patient/Family views	Previous literature	Own work/Piloting			Didactics	Reflection/Discussion	Group Work	Case Studies	Com. Model[a]	Role Play	Personal Vid/Aud[b]	Clinical Exp, or Visit[c]	E-learning	Self-Study						Patient/Family	Behaviours	Processes	Self Assessment	Objective Knowledge
Fischer (2003)[53] *USA*			✓		Junior doctors	2-10 hours		✓		✓		✓				✓		Controlled, pre- and post-test	M		50-99				✓	✓
Fluharty (2012)[54] *USA*					Nurses	M/U	✓	✓				✓						Pre/post-test, no control	H		200+				✓	✓
Gerlach (2015)[55] *Germany*					Medical students	11-20 hours	✓		✓			✓						Pre/post-test, no control	M		150-199				✓	✓
Grossman (2013)[56] *USA*					Nursing students	M/U		✓			✓	✓						Pre/post-test, no control	M		50-99				✓	✓
Hainsworth (1996)[57] *USA*	✓		✓		Nurses	2-10 hours	✓	✓				✓				✓		Randomised, controlled	M		0-49				✓	
Hayes (unpub)[58] *USA*					Medical students	31+ hours	✓					✓		✓	✓			Pre/post-test, no control			50-99				✓	
Hegedus (2008)[59] *Hungary*					Multidisciplinary group (inc. non-reg)	M/U												Pre/post-test, no control	M		150-199				✓	
Hughes (2006)[60] *UK*	✓		✓		Nurses	M/U	✓	✓		✓								Pre/post-test, no control	M		0-49				✓	✓
Hussainy (2010)[61] *Australia*	✓		✓		Pharmacists	21-30 hours		✓							✓			Post-test only, no control	M		0-49				✓	
Kitzes (2009)[62] *USA*			✓		Medical students	M/U												Mixed designs	L		150-199				✓	
Klaristenfeld (2007)[63] *USA*	✓				Junior doctors	2-10 hours	✓	✓			✓	✓				✓		Pre/post-test, no control	M		0-49				✓	✓

Training ID	Development: Staff views	Development: Patient/Family views	Development: Previous literature	Development: Own work/Piloting	Staff Group	Training Hours	Teaching methods: Didactics	Reflection/Discussion	Group Work	Case Studies	Com. Model[a]	Role Play	Personal Vid/Aud[b]	Clinical Exp, or Visit[c]	E-learning	Self-Study	Study ID, if multiple	Study Design	Study Quality*	Paper ID, if multiple	N	Outcome Types: Patient/Family	Behaviours	Processes	Self Assessment	Objective Knowledge
Kruse (2008)[64] *USA*			✓		Nurses	2-10 hours	✓	✓		✓				✓				Randomised, controlled	M		50-99				✓	
Magnani (2002)[65] *USA*	✓				Medical students	2-10 hours	✓	✓		✓		✓				✓		Post-test only, no control	M		50-99				✓	
Mason (2008-10)[66, 67] *UK*	✓		✓	✓	Medical students	31+ hours	✓	✓		✓				✓			Mason (2008)[66]	Pre/post-test, no control	H		100-149				✓	
																	Mason (2010)[67]	Controlled, pre- and post-test	H		200+				✓	
McCormick (unpub)[68] *USA*			✓		Social workers	M/U	✓	✓						✓		✓		Pre/post-test, no control			0-49	✓			✓	
McFarland (2006)[69] *USA*			✓		Junior doctors	2-10 hours	✓				✓	✓				✓		Pre/post-test, no control	M		0-49				✓	✓
Mulder (2009)[70] *Netherlands*	✓		✓		Junior doctors	11-20 hours		✓		✓						✓		Pre/post-test, no control	M		0-49				✓	✓
Mullins (1983)[71] *USA*					Nurses & healthcare assistants	2-10 hours	✓	✓	✓									Randomised, controlled	M		100-149				✓	✓
Mutto (2014)[72] *Argentina*	✓		✓		Medical students	21-30 hours	✓		✓					✓	✓	✓		Controlled, pre- and post-test	M		100-149				✓	✓
Nash (1993)[73] *UK*					Nurses & doctors	11-20 hours	✓	✓	✓	✓		✓						Pre/post-test, no control	M		50-99				✓	
Okon (2004)[74] *USA*		✓	✓		Junior doctors	M/U	✓				✓			✓				Controlled, pre- and post-test	H		0-49				✓	✓

Training ID	Development: Staff views	Development: Patient/Family views	Development: Previous literature	Development: Own work/Piloting	Staff Group	Training Hours	Teaching methods: Didactics	Reflection/Discussion	Group Work	Case Studies	Com. Model[a]	Role Play	Personal Vid/Aud[b]	Clinical Exp, or Visit[c]	E-learning	Self-Study	Study ID, if multiple	Study Design	Study Quality*	Paper ID, if multiple	N	Outcome Types: Patient/Family	Behaviours	Processes	Self Assessment	Objective Knowledge
Pimple (2003)[75] *USA*					Nurses & Nursing Students	31+ hours	✓	✓		✓		✓		✓				Post-test only, no control	L		#NULL!				✓	
Porter-Williamson[76] (2004) *USA*			✓		Medical students	21-30 hours	✓	✓	✓	✓				✓				Pre/post-test, no control	M		100-149				✓	✓
Quinn (2008)[77] *Australia*	✓		✓		Multidisciplinary group	11-20 hours	✓	✓		✓						✓		Pre/post-test, no control	M		200+				✓	✓
Ray (2014)[78] *Australia*	✓				Multidisciplinary group	M/U	✓	✓	✓	✓					✓			Pre/post-test, no control	M		100-149				✓	
Schulz (2013)[79] *Germany*			✓		Medical students	21-30 hours	✓	✓	✓			✓				✓		Controlled, pre- and post-test	H		0-49				✓	
Schwartz (2005)[80] *USA*					Medical students	M/U	✓		✓	✓				✓				Mixed designs	H		150-199				✓	
Seoane (2012)[81] *USA*					Junior doctors	M/U	✓	✓		✓								Pre/post-test, no control	M		200+				✓	
Shih (2012)[82] *Taiwan*					Medical students	2-10 hours	✓	✓	✓			✓		✓				Pre/post-test, no control	H		200+				✓	✓
Shunkwiler[83] (2005) *USA*					Medical students	M/U	✓		✓					✓		✓		Pre/post-test, no control	M		0-49		✓		✓	
Silk (2009)[84] *USA*			✓		Medical students	2-10 hours	✓	✓				✓		✓				Controlled, pre- and post-test	M		50-99				✓	
Silverdale[85] (2005) *UK*					Multidisciplinary group (inc. non-reg)	M/U	✓	✓	✓						✓			Pre/post-test, no control	M		200+				✓	

Training ID	Development: Staff views	Development: Patient/Family views	Development: Previous literature	Development: Own work/Piloting	Staff Group	Training Hours	Teaching methods: Didactics	Reflection/Discussion	Group Work	Case Studies	Com. Model[a]	Role Play	Personal Vid/Aud[b]	Clinical Exp, or Visit[c]	E-learning	Self-Study	Study ID, if multiple	Study Design	Study Quality*	Paper ID, if multiple	N	Outcome Types: Patient/Family	Behaviours	Processes	Self Assessment	Objective Knowledge
Stecho (2012)[86] *Canada*					Medical students	M/U	✓		✓					✓				Controlled, pre- and post-test	M		100-149				✓	
Steven (2014)[87] *UK*			✓		Nurses	M/U	✓							✓		✓		Pre/post-test, no control	M		0-49				✓	
Sweeney (2014)[88] *Ireland*			✓		Medical students	21-30 hours	✓	✓		✓		✓		✓				Pre/post-test, no control	H		0-49				✓	
Tchorz (2013)[89] *USA*					Medical students	2-10 hours									✓	✓		Post-test only, no control	M		50-99		✓			
Torke (2004)[90] *USA*	✓				Medical students	2-10 hours	✓				✓	✓						Post-test only, no control	M		100-149				✓	
von Gunten[91] (2005) *USA*					Junior doctors	2-10 hours	✓	✓	✓					✓		✓		Pre/post-test, no control	M		0-49		✓		✓	✓
von Gunten (2012)[92] *USA*			✓		Medical students	21-30 hours	✓	✓	✓					✓				Controlled, pre- and post-test	M		200+				✓	✓
Warnke (2014)[93] *USA*	✓		✓		Nurses	2-10 hours	✓	✓				✓						Pre/post-test, no control	L		0-49				✓	
Wetcher (2013)[94] *USA*					Medical students	2-10 hours		✓	✓							✓		Pre/post-test, no control	M		0-49				✓	
Wen (2012)[95] *USA*			✓		Nurses & healthcare assistants	2-10 hours	✓	✓		✓								Pre/post-test, no control	M		100-149				✓	
Yacht (2007)[96] *USA*	✓				Junior doctors	M/U	✓							✓		✓		Mixed designs	M		50-99				✓	✓

Training ID	Development: Staff views	Development: Patient/Family views	Development: Previous literature	Development: Own work/Piloting	Staff Group	Training Hours	Teaching methods: Didactics	Reflection/Discussion	Group Work	Case Studies	Com. Model[a]	Role Play	Personal Vid/Aud[b]	Clinical Exp, or Visit[c]	E-learning	Self-Study	Study ID, if multiple	Study Design	Study Quality*	Paper ID, if multiple	N	Outcome Types: Patient/Family	Behaviours	Processes	Self Assessment	Objective Knowledge
Yamamoto (2015)[97] *Japan*			✓		Doctors	11-20 hours	✓	✓	✓			✓						Pre/post-test, no control	H		50-99				✓	✓
Yang (2013)[98] *USA*			✓		Junior doctors	M/U	✓							✓				Controlled, pre- and post-test	M		0-49				✓	✓
Yardley (2013)[99] *UK*			✓		Medical students	2-10 hours	✓	✓		✓								Post-test only, no control	M		150-199				✓	
Yoshioka (2013)[100] *Japan*			✓		Nurses	11-20 hours	✓	✓	✓	✓								Pre/post-test, no control	M		0-49				✓	
Communication Skills inc. PC/EOL																										
Baile (2013)[101] *USA*			✓		Multidisciplinary group	2-10 hours		✓	✓	✓		✓						Post-test only, no control	M		0-49				✓	
Dikici (2009)[102] *Turkey*					Medical students	M/U	✓	✓	✓	✓								Pre/post-test, no control	M		100-149		✓		✓	
Erickson (2014)[103] *USA*	✓		✓		Nursing & Medical Students	2-10 hours	✓	✓	✓			✓						Pre/post-test, no control	H		100-149				✓	
Kiluk (2012)[104] *USA*					Medical students	2-10 hours		✓			✓	✓	✓			✓		Pre/post-test, no control	M		100-149				✓	
Lienard (2010)[105, 106] *Belgium*			✓		Junior doctors	31+ hours	✓	✓				✓		✓				Randomised, controlled	H	Lienard (2010a)[105]	50-99	✓	✓		✓	
																				Lienard (2010b)[106]	50-99		✓			
McConville (2006)[107] *UK*	✓				Nursing students	M/U									✓	✓		Pre/post-test, no control	M		100-149				✓	

Training ID	Development: Staff views	Patient/Family views	Previous literature	Own work/Piloting	Staff Group	Training Hours	Teaching methods: Didactics	Reflection/Discussion	Group Work	Case Studies	Com. Model[a]	Role Play	Personal Vid/Aud[b]	Clinical Exp, or Visit[c]	E-learning	Self-Study	Study ID, if multiple	Study Design	Study Quality*	Paper ID, if multiple	N	Outcome Types: Patient/Family	Behaviours	Processes	Self Assessment	Objective Knowledge
Rosenbaum (2002)[108] *USA*					Medical students	2-10 hours	✓	✓	✓			✓	✓					Pre/post-test, no control	M		200+				✓	
Skye (2014)[109] *USA*					Medical students	M/U		✓	✓	✓		✓				✓		Post-test only, no control	M		200+				✓	
Tang (2014)[110] *Taiwan*			✓		Multidisciplinary group	11-20 hours	✓	✓	✓		✓	✓						Pre/post-test, no control	H		200+				✓	
Turner/Johnson (2011/2013)[111, 112] *UK*			✓		Multidisciplinary group	21-30 hours	✓					✓					Johnson (2013)[111]	Controlled, post-test only	M		0-49	✓				
																	Turner (2011)[112]	Controlled, post-test only	M		100-149				✓	
Specialism (Cancer) inc. PC/EOL communication																										
Aspegren et al (1996-2003)[113, 114] *Nordic Countries (multiple)*				✓	Doctors & junior doctors	31+ hours	✓	✓	✓			✓	✓			✓	Aspegren (1996)[113]	Pre/post-test, no control	M		0-49				✓	
																	Finset (2003)[114]	Pre/post-test, no control	M		150-199				✓	✓
Back (2007)[115] *USA*		✓	✓		Junior doctors	31+ hours	✓	✓			✓	✓						Pre/post-test, no control	H		100-149		✓			
Baile (1997)[116] *USA*	✓				Doctors	11-20 hours	✓	✓				✓	✓					Pre/post-test, no control	M		0-49				✓	
Baile (1999)[117] *USA*	✓		✓		Doctors	2-10 hours	✓	✓		✓	✓	✓						Pre/post-test, no control	M		0-49				✓	

Training ID	Development: Staff views	Development: Patient/Family views	Development: Previous literature	Development: Own work/Piloting	Staff Group	Training Hours	Teaching methods: Didactics	Reflection/Discussion	Group Work	Case Studies	Com. Model[a]	Role Play	Personal Vid/Aud[b]	Clinical Exp, or Visit[c]	E-learning	Self-Study	Study ID, if multiple	Study Design	Study Quality*	Paper ID, if multiple	N	Outcome Types: Patient/Family	Behaviours	Processes	Self Assessment	Objective Knowledge
Bar-Sela (2012)[118] *Israel*					Junior doctors	11-20 hours		✓		✓								Pre/post-test, no control	M		0-49				✓	
Bylund et al (2011-15)[119, 120] *USA*	✓		✓	✓	Nurses & Junior Doctors	2-10 hours	✓	✓	✓	✓		✓	✓			✓	Bylund (2011)[119]	Pre/post-test, no control	M		200+				✓	
																	Coyle (2015)[120]	Pre-(retrospective) and post-test, no control	M		200+				✓	
Eid (2009)[121] *USA*			✓		Nurses & Junior Doctors	M/U	✓			✓	✓	✓						Pre/post-test, no control	M		0-49		✓		✓	
Fallowfield et al (1998-2003)[122-126] *UK*			✓		Doctors & junior doctors	21-30 hours	✓	✓	✓			✓	✓				Fallowfield (1998)[122]	Pre/post-test, no control	M	Fallowfield (1998)[122]	150-199				✓	
																	Fallowfield et al (2002-03)[123-126]	Randomised, controlled	H	Fallowfield (2002) [123]	150-199		✓			
																				Fallowfield (2003)[124]	50-99		✓			
																				Jenkins (2002)[125]	50-99		✓		✓	
																				Shilling (2003)[126]	150-199	✓			✓	
Fujimori (2003)[127] *Japan*			✓		Doctors	11-20 hours	✓	✓	✓	✓	✓	✓				✓		Pre/post-test, no control	M		50-99				✓	

Training ID	Development: Staff views	Development: Patient/Family views	Development: Previous literature	Development: Own work/Piloting	Staff Group	Training Hours	Teaching methods: Didactics	Reflection/Discussion	Group Work	Case Studies	Com. Model[a]	Role Play	Personal Vid/Aud[b]	Clinical Exp, or Visit[c]	E-learning	Self-Study	Study ID, if multiple	Study Design	Study Quality*	Paper ID, if multiple	N	Outcome Types: Patient/Family	Behaviours	Processes	Self Assessment	Objective Knowledge
Fujimori (2014)[128, 129] *Japan*	✓	✓	✓	✓	Doctors	2-10 hours	✓	✓			✓	✓					Fujimori (2014a)[128]	Pre/post-test, no control	M		0-49		✓		✓	
																	Fujimori (2014b)[129]	Randomised, controlled	H		0-49	✓	✓		✓	
Fukui (2008-10)[130, 131] *Japan*			✓		Nurses	11-20 hours	✓		✓	✓	✓	✓					Fukui (2008)[130]	Randomised, controlled	H		0-49	✓				
																	Fukui (2010)[131]	Pre/post-test, no control	M		0-49				✓	
Goelz (2011)[132] *Germany*			✓	✓	Doctors	11-20 hours	✓				✓	✓	✓					Randomised, controlled	H		0-49		✓			
Grainger (2010)[133] *Australia*	✓		✓	✓	Multidisciplinary group	2-10 hours	✓	✓	✓			✓						Post-test only, no control	M		50-99				✓	
Gueguen (2009)[134] *USA*			✓	✓	Multidisciplinary group	M/U	✓	✓	✓			✓						Pre- (retrospective) and post-test, no control	M		0-49				✓	
Head (2015)[135] *USA*	✓		✓	✓	Multidisciplinary Students	M/U	✓	✓	✓					✓	✓			Pre/post-test, no control	M		200+				✓	✓
Hulsman (2002)[136] *Netherlands*					Doctors	2-10 hours	✓	✓		✓					✓			Pre/post-test, no control	H		0-49		✓		✓	
Kruijver (2001)[137] *Netherlands*					Nurses	11-20 hours	✓	✓				✓				✓		Randomised, controlled	M		0-49		✓			
Lenzi (2005)[138] *USA*			✓		Junior doctors	21-30 hours	✓		✓			✓				✓		Pre/post-test, no control	M		0-49				✓	✓

Training ID	Development: Staff views	Development: Patient/Family views	Development: Previous literature	Development: Own work/Piloting	Staff Group	Training Hours	Teaching methods: Didactics	Reflection/Discussion	Group Work	Case Studies	Com. Model[a]	Role Play	Personal Vid/Aud[b]	Clinical Exp, or Visit[c]	E-learning	Self-Study	Study ID, if multiple	Study Design	Study Quality*	Paper ID, if multiple	N	Outcome Types: Patient/Family	Behaviours	Processes	Self Assessment	Objective Knowledge
Lenzi (2011)[139] *Italy*			✓		Doctors	21-30 hours	✓	✓	✓			✓						Pre/post-test, no control	M		50-99				✓	✓
Lupo (2012)[140] *Italy*	✓				Nurses	31+ hours	✓			✓		✓						Pre/post-test, no control	H		0-49			✓	✓	
Morita (2007)[141] *Japan*			✓		Nurses	2-10 hours	✓	✓	✓	✓		✓						Pre/post-test, no control	M		100-149				✓	
Razavi / Delvaux (2002/2004)[142, 143] *Belgium*				✓	Nurses	31+ hours	✓					✓						Randomised, controlled	H	Delvaux (2004)[142]	100-149	✓	✓		✓	
																				Razavi (2002)[143]	100-149		✓			
Rosenzweig[144] (2007) *USA*	✓		✓		Nurses	M/U	✓	✓	✓		✓	✓	✓					Pre/post-test, no control	M		0-49				✓	
Shumway (unpub)[145] *USA*	✓		✓		Junior doctors	M/U	✓			✓	✓	✓						Pre/post-test, no control			0-49				✓	
Tulsky (2011)[146] *USA*			✓	✓	Doctors	2-10 hours	✓	✓					✓					Randomised, controlled	H		0-49	✓	✓			
Udo (2014)[147] *Sweden*	✓		✓		Nurses	M/U	✓	✓	✓							✓		Randomised, controlled	H		0-49				✓	
Wilkinson (2003)[148] *UK*			✓		Nurses	21-30 hours	✓	✓				✓	✓			✓		Pre/post-test, no control	H		100-149		✓		✓	

Training ID	Development					Staff Group	Training Hours	Teaching methods											Study Design	Study Quality*	Paper ID, if multiple	N	Outcome Types					
	Staff views	Patient/Family views	Previous literature	Own work/Piloting				Didactics	Reflection/Discussion	Group Work	Case Studies	Com. Model[a]	Role Play	Personal Vid/Aud[b]	Clinical Exp, or Visit[c]	E-learning	Self-Study	Study ID, if multiple					Patient/Family	Behaviours	Processes	Self Assessment	Objective Knowledge
Wuerstlein/Ulbach (unpub)[149, 150] *Germany*					Multidisciplinary group	11-20 hours		✓	✓	✓									Pre/post-test, no control		Ulbach (unpub)[149]	0-49				✓	
																					Wuerstlein (unpub)[150]	0-49				✓	
Specialism (AIDS) inc. PC/EOL communication																												
Berghuis (1990)[151] *USA*					Volunteers	21-30 hours		✓		✓			✓						Pre/post-test, no control	M		50-99				✓	
Brown (2015)[152] *USA*					Nurses	21-30 hours		✓		✓									Pre/post-test, no control	H		0-49				✓	✓
Specialism (Advanced Kidney Disease) inc. PC/EOL communication																												
Bristowe (2013)[153] *UK*	✓	✓	✓		Multidisciplinary group	11-20 hours		✓	✓			✓	✓						Pre/post-test, no control	M		0-49				✓	
Schell (2013)[154] *USA*			✓		Junior doctors	2-10 hours		✓	✓			✓	✓						Pre/post-test, no control	M		0-49				✓	
Specialism (Cycstic Fibrosis) inc. PC/EOL communication																												
Linnemann (2015)[155] *USA*	✓	✓			Multidisciplinary group	11-20 hours													Pre/post-test, no control	M		0-49				✓	
Specialism (Primary Care) inc. PC/EOL communication																												
Braude (2015)[156] *UK*	✓		✓		Multidisciplinary group	2-10 hours		✓	✓	✓			✓						Pre/post-test, no control	M		50-99				✓	
Duane (2011)[157] *USA*					Junior doctors	≤1 hour										✓	✓		Pre/post-test, no control	M		0-49			✓	✓	✓

Training ID	Development: Staff views	Patient/Family views	Previous literature	Own work/Piloting	Staff Group	Training Hours	Teaching methods: Didactics	Reflection/Discussion	Group Work	Case Studies	Com. Model[a]	Role Play	Personal Vid/Aud[b]	Clinical Exp, or Visit[c]	E-learning	Self-Study	Study ID, if multiple	Study Design	Study Quality*	Paper ID, if multiple	N	Outcome Types: Patient/Family	Behaviours	Processes	Self Assessment	Objective Knowledge
Mehdi (2014)[158] *UK*	✓				Nurses & Junior Doctors	2-10 hours	✓		✓			✓						Pre/post-test, no control	M		0-49				✓	
Sanchez-Reilly (2007)[159] *USA*	✓				Medical students	2-10 hours	✓	✓	✓	✓	✓			✓				Pre/post-test, no control	M		0-49				✓	✓
Specialism (Heart Failure) inc. PC/EOL communication																										
Zapka (2006a)[160] *USA*					Nurses & healthcare assistants	≤1 hour	✓	✓	✓	✓						✓		Pre/post-test, no control	H		50-99				✓	
Zapka (2006b)[161] *USA*	✓		✓		Nurses & social workers	2-10 hours	✓	✓	✓	✓								Pre/post-test, no control	M		50-99				✓	
Specialism (Neurology) inc. PC/EOL communication																										
Schuh (2007)[162] *USA*	✓				Junior doctors	11-20 hours	✓	✓				✓				✓		Controlled, pre- and post-test	M		0-49				✓	✓
Watling (2007)[163] *Canada*					Junior doctors	11-20 hours	✓	✓				✓						Pre/post-test, no control	M		0-49		✓		✓	
Specialism (Physiotherapy) inc. PC/EOL communication																										
Goldsmith (2015)[164] *USA*			✓	✓	Physiotherapists	2-10 hours	✓		✓	✓								Pre/post-test, no control	H		50-99				✓	
Specialism (Primary Care) inc. PC/EOL communication																										
Eastaugh (1998)[165] *UK*	✓				Nurses & doctors	11-20 hours		✓	✓	✓		✓						Post-test only, no control	M		0-49				✓	
Kadlec (2015)[166] *Canada*	✓				Doctors	11-20 hours	✓							✓		✓		Pre/post-test, no control	M		200+				✓	

Training ID	Development	Staff views	Patient/Family views	Previous literature	Own work/Piloting	Staff Group	Training Hours	Teaching methods	Didactics	Reflection/Discussion	Group Work	Case Studies	Com. Model[a]	Role Play	Personal Vid/Aud[b]	Clinical Exp, or Visit[c]	E-learning	Self-Study	Study ID, if multiple	Study Design	Study Quality*	Paper ID, if multiple	N	Outcome Types	Patient/Family	Behaviours	Processes	Self Assessment	Objective Knowledge
Pelayo-Alveraz (2011-13)[167, 168] *Spain*				✓		Doctors	31+ hours		✓								✓	✓		Randomised, controlled	H	Pelayo-Alvarez (2011)[167]	150-199					✓	✓
																						Pelayo-Alvarez (2013)[168]	50-99		✓			✓	✓
Slort (2013)[169] *Netherlands*		✓	✓	✓	✓	Doctors	M/U		✓	✓	✓			✓					✓		Controlled, pre- and post-test	H		100-149		✓			
Ward (2009)[170] *UK*		✓		✓		Doctors	M/U		✓							✓		✓			Pre/post-test, no control	M		0-49				✓	✓

*H=High, M=Medium, L=Low; [a] Com. Model = Communication skills model, e.g. SPIKES, SHARE; [b] Personal Vid/Aud = Personalised video/audio materials; [c] Clinical Exp. Or Visit = Clinical experiences (e.g. spending time with palliative care team) or visits (e.g. to hospice)

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